REMARKS

Independent claims 7 and 19 remain in the present application. Claims 7 and 19 are rejected under 35 U.S.C. §103 as being unpatentable over U.S. Patent No. 6,529,954 (hereinafter "Cookmeyer") in view of Ma et al., "Mining Event Data for Actionable Patterns," 2000 (hereinafter "Ma").

Amended independent claim 7 recites a computer-based method of providing decision support to an analyst in accordance with an event management system which manages a network with one or more computing devices, the method comprising the steps of: automatically analyzing, off-line, data representing past events associated with the network of computing devices being managed by the event management system, the automated off-line analysis comprising generation of one or more visualizations of one or more portions of the past event data and discovery of one or more patterns in the past event data; and automatically managing rules off-line, the automated off-line rule management comprising construction and validation of one or more rules formed in accordance with the automated off-line analysis of the past event data, wherein one or more rules are constructed offline and validated offline based directly on at least a portion of the one or more visualizations generated offline from the corresponding offline analysis of the one or more portions of the past event data and the offline discovery of at least a portion of the one or more patterns in the past event data; wherein the past event data is obtained from an event database and the one or more rules are provided to a rule database, the event database and the rule database being associated with an execution system of the event management system; wherein generation of the one or more visualizations of the one or more portions of the past event data further comprises: selecting a subset of the past event data from the event database; generating a visualization of the subset of past event data using a visualization tool; the analyst reviewing the visualization to determine whether there are any groupings of events that are of interest presented therein; and performing an appropriate action when an event grouping of interest is found; wherein discovery of the one or more patterns in the past event data further comprises: selecting a subset of the past event data from the event database; mining the subset of the past event data to discover the one or more patterns using a mining tool; generating a visualization of the one or more patterns using a visualization tool; the analyst

reviewing the visualization to determine whether there are any patterns of interest presented therein; and performing an appropriate action when a pattern of interest is found; wherein validation of the one or more rules further comprises: selecting a subset of the past event data from the event database; finding one or more instances of patterns expressed in terms of left-hand sides of rules; generating a visualization of the one or more pattern instances using a visualization tool; analyzing the left-hand sides of rules using a rule validation tool; displaying results of the analysis operation; the analyst assessing analysis results; and marking the rules as one of validated and not validated based on the assessment by the analyst; wherein construction of the one or more rules further comprises: selecting a subset of the past event data from the event database; mining the subset of the past event data to discover the one or more patterns using a mining tool; assessing significance of the one or more patterns using a visualization tool; constructing the one or more rules from a selected subset of the one or more patterns using a rule construction tool; and writing the one or more rules in the rule database. Independent claim 19 recites similar limitations.

Applicants traverse the rejections based on similar arguments presented in their previous response dated October 12, 2007, the disclosure of which is incorporated by reference herein.

While Applicants address the Cookmeyer reference and Ma reference individually to refute the specific reasons offered by the Examiner to reject claims 7 and 19, it is to be understood that the arguments are directed at the combination of Cookmeyer and Ma.

Despite the assertions in the Office Action, Cookmeyer does not disclose a combined off-line automatic data analysis and off-line rule management methodology, as in the claimed invention. Applicants again respectfully point out that the only "off-line" operation that Cookmeyer suggests is with regard to "expert analysis." In fact, Applicants reiterate that the only occurrences of the term "off-line" in Cookmeyer appear at col. 5, line 44; col. 5, line 58; col. 5, line 62; col. 21, line 46; and col. 5, line 53, and in each occurrence, it is clear that the term "off-line" is used only in the context of "expert analysis" and not in the context of a combined automatic data analysis and rule management methodology, as in the claimed invention.

The relationship between the so-called expert analysis and the rules can be seen in the Abstract of Cookmeyer, which states that the rule-based expert analysis system of Cookmeyer

"allows the rules that are used in the analysis to be <u>defined at run time, instead of fixed rules which</u> <u>are defined at design time</u> and which use fixed threshold values" (underlining added for emphasis). Thus, any rules that Cookmeyer refers to are defined at run time (i.e., online) rather than at design time (i.e., offline). Hence, Cookmeyer does not disclose that one or more rules are constructed offline and validated offline based directly on at least a portion of the one or more visualizations generated offline from the corresponding offline analysis of the one or more portions of the past event data and the offline discovery of at least a portion of the one or more patterns in the past event data, as in the claimed invention.

However, whether or not one can suggest that Cookmeyer discloses rule management that is associated with some form of expert analysis, it is clear that Cookmeyer does not disclose that one or more rules are constructed offline and validated offline based directly on at least a portion of the one or more visualizations generated offline from the corresponding offline analysis of the one or more portions of the past event data and the offline discovery of at least a portion of the one or more patterns in the past event data, as recited by the claimed invention. That is, there are no steps/operations disclosed in Cookmeyer for offline rule construction and offline rule validation that are <u>based directly on</u> at least a portion of the one or more visualizations generated offline from <u>the</u> <u>corresponding offline analysis</u> of the one or more portions of the past event data and the offline discovery of at least a portion of the one or more patterns in the past event data (again, underlining added for emphasis). Again, <u>rules are handled in Cookmeyer at run time, not offline</u>.
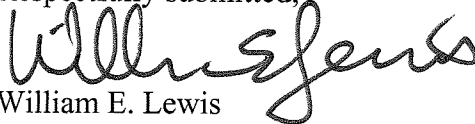
For the sake of explanation, assume that in Cookmeyer, "Capture File" occurrences are representative of past events associated with the network of computing devices being managed by the event management system, and an off-line analysis of the "Capture File" occurrences is performed. Cookmeyer does not teach or suggest generating one or more visualizations of one or more portions of the "Capture File" occurrences and discovering one or more patterns associated with the "Capture File" occurrences. Rather, an analysis of the "Capture File" occurrences in Cookmeyer results in generating "events" and "symptoms" which are accumulated in a Results Journal. Furthermore, there is no suggestion in Cookmeyer that one or more rules are constructed offline and validated offline based directly on at least a portion of the Results Journal. In contrast,

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the claimed invention recites performing "automated rule off-line management comprising construction and validation of one or more rules formed in accordance with the automated off-line analysis of the past event data, wherein <u>one or more rules are constructed offline and validated offline based directly on at least a portion of the one or more visualizations generated offline from the corresponding offline analysis of the one or more portions of the past event data and the offline discovery of at least a portion of the one or more patterns in the past event data</u>."

In characterizing the Ma reference as allegedly meeting certain limitations, the Examiner relies on various portions of Ma. However, no where in the relied-upon portions of Ma does the Ma reference teach or suggest constructing one or more rules <u>offline</u> by the rule construction module and validating <u>offline</u> by the rule validation module based directly on at least a portion of the one or more visualizations generated <u>offline</u> by the event visualization module from the corresponding <u>offline</u> analysis of the one or more portions of the event data and the <u>offline</u> discovery of at least a portion of the one or more patterns in the event data by the event mining module.

In view of the foregoing, Applicants believe that claims 7 and 19 are in condition for allowance, and respectfully request withdrawal of the rejections.

Respectfully submitted,

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William E. Lewis
Attorney for Applicant(s)
Reg. No. 39,274
Ryan, Mason & Lewis, LLP
90 Forest Avenue
Locust Valley, NY 11560
(516) 759-2946